

### **REMARKS**

This is a full and timely response to the outstanding non-final Office Action mailed August 26, 2004 (Paper No. 7). Upon entry of this response, claims 70-102 are pending in the application. In this response, claims 80-102 have been added, and claims 1-69 have been cancelled. Applicant respectfully requests that the amendments being filed herewith be entered and request that there be reconsideration of all pending claims.

1. **Response to Restriction Requirement**

The Office Action requires Applicant to elect to prosecute one of three groups of claims. In response to this restriction requirement, Applicant elects to prosecute the claims of Group III, corresponding to claims 70-79.

The claims corresponding to Groups I and II, namely claims 1-69, are cancelled in this Response. Applicant expressly reserves the right to present the non-elected claims, or variants thereof, in continuing applications to be filed subsequent to the present application.

2. **Drawings Objections**

The drawings have been objected to under 37 CFR 1.84(p)(4). Specifically, the Office Action states that “reference character ‘151’ in Figure 4A has been used to designate both a data bus and a subtracter.” Applicant has amended Figure 4A to use reference numeral 155 for the subtracter instead of 151. Applicant has also amended Figure 4A to change the reference numeral on the line leading to Saved Coefficients 146, from 152 to 160, as reference numeral 152 is also used for the precoder reconstruction filter. Applicant has further amended the specification to be consistent with these drawing amendments.

The drawings have been further objected to under 37 CFR 1.84(p)(5). Specifically, the Office Action states that the drawings “include the following reference character(s) not mentioned in the description: ‘24’ in Figure 2; ‘36’, ‘64’, and ‘66’ in Figure 3; ‘36’, ‘112’, ‘137’, ‘154’ and ‘156’ in Figure 4A; ‘162’, ‘181’, ‘184’ and ‘189’ in Figure 4B; and ‘216’ in Figure 6.” Applicant has amended the Figures as follows to remove several objected-to numerals: 24 in Figure 2; 64 and 66 in Figure 3; 112, 137, 154, and 156 in Figure 4A; and 162, 181, 184 and 189 in Figure 4B. With regard to the remaining objected-to reference numerals (36 in Figure 3 and 216 in Figure 6), Applicant has amended the specification to include these reference numerals.

Applicant respectfully asserts that the drawing objections have been overcome by these amendments.

3. Specification Amendments

Applicant has amended the specification to include a description of two drawing elements: reference numeral 36 of Figure 3 and reference numeral 216 in Figure 6. Applicant respectfully submits that these amendments do not constitute new matter, since these elements were present in the figures originally filed. Applicant has further amended the specification to use reference numerals 155 and 160 instead of 151 and 152, to be consistent with drawing amendments.

4. Rejection of Claims 71, 73, 76, and 78 under 35 U.S.C. §112

Claims 71, 73, 76, and 78 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Office Action states that there is insufficient basis for the limitation “the adaptive parameters” in claims 71, 73, 76, and 78. (Office Action, p. 6). Claims 71 and 76 have been amended to recite “at least one parameter.” Claims 73 and 78

have been amended to recite “at least one parameter of an adaptive device.” Applicant respectfully submits that these amendments overcome the rejection, and requests that the rejection of claims 71, 73, 76, and 78 be withdrawn.

5. Rejection of Claims 70 and 75 under 35 U.S.C. §102

Claims 70 and 75 have been rejected under §102(b) as allegedly anticipated by *Byers et al.* (U.S. 5,524,218). Applicant respectfully traverses this rejection. A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983).

Applicant respectfully submits that *Byers et al.* does not disclose, teach, or suggest the feature of “a digital signal processor” as recited in claim 70, or the feature of “performing, in a digital signal processor (DSP), layer two error detection” as recited in claim 75. The Office Action alleges that this feature is disclosed in *Byers et al.* at Col. 3, lines 26-32. (Office Action, p. 7). Applicant respectfully disagrees.

The Office Action further alleges that the “digital signal processor” recited in claims 70 and 75 correspond to “the first physical layer controller for sending data packets over an optical fiber to a second processor comprising a second physical layer controller” in *Byers et al.* Applicant respectfully asserts that the “controller” disclosed in *Byers et al.* is not a “processor.” To one of ordinary skill in the art, the term “processor” implies fetching and executing instructions from memory. The controller described in *Byers et al.* is PLAYER0 (138) and PLAYER1 (140). There is no suggestion or teaching in *Byers et al.* that PLAYER0 and PLAYER1 execute instructions. The only description in *Byers et al.* of the PLAYER interface is a data interface:

The interface between the Light Pipe Frame Control (LPFC) 132 (see FIG. 6) and the PLAYER+ components 138, 140 consists of two byte-wide paths, one for data input to the PLAYER+ components (i.e., Lines 134, 136), and one for data output from the PLAYER+ components (i.e., Lines 150, 152). Each byte-wide path consists of a parity bit (odd parity), a control bit, and two 4-bit symbols. Each 4-bit symbol passed to a PLAYER+ component from the LPFC is encoded in a 5-bit format for transmission via one of the Fiber Optic Transmitters (Optic Send) 226, 228. (Col. X, lines X-Y.)

Even assuming, *arguendo*, that the PLAYER has registers for a control interface as well as the described data interface, Applicant respectfully maintains that such an interface is not equivalent to executing instructions from memory.

Furthermore, even assuming *arguendo* that the PLAYER controller is a processor, Applicant disagrees with the Office Action's conclusion that

a packet transmitted over an optical fiber is a digital signal and since the first and second processors comprising first and second layer physical controllers are used for processing the packetized digital signal, the first and second processors comprising first and second physical layer controllers are digital signal processors.  
(p. 7)

Applicant notes that claims 70 and 75 do not recite purely functional language such as "logic for processing a digital signal." Claims 70 and 75 instead recite a structural element ("processor") of a specific class or type ("digital signal processor"). *Byers et al.* does not teach or suggest that the PLAYER controller is a specific class or type of processor.

Applicant notes that the following passage in *Byers et al.* does disclose a microprocessor:

The architecture of the DM 48 as an instance of a Microsequencer Bus Controller System shows that there are two Microsequencer Bus Controllers (uSBCs) 94, 96 connected to a Control Store (CS) 98 via Lines 100, 102. The uSBC 0 94 and uSBC 1 96 are Reduced Instruction Set (RISC) microprocessors that control various special purpose gate arrays called Stations connected to the Micro Bus 104. The uSBCs execute the same instruction stream in parallel with each other.

(Col. X, lines X-Y.)

However, this uSBC is not a “digital signal processor” but is clearly described as a different type of microprocessor, a “RISC microprocessor.”

For at least the reason that *Byers et al.* fails to disclose, teach or suggest “wherein at least one of the pictures corresponds to a television program to be broadcast in the future,” Applicant respectfully submits that claims 70 and 75 ended overcome the rejection. Therefore, Applicant requests that the Examiner’s rejection of claims 70 and 75 be withdrawn.

6. Rejection of Claims 71-74 and 76-79 under 35 U.S.C. §103

Claims 71-74 and 76-79 have been rejected under §103(a) as allegedly obvious over *Byers et al.* (U.S. 5,524,218) in view of *Aoyagi et al.* (U.S. 4,613,975). Applicant respectfully traverses this rejection. It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly, all elements/ feature/steps of the claim at issue. *See, e.g., In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981).

a. Claims 71 and 76

Applicant respectfully submits that claims 71 and 76 are allowable for at least the reason that the proposed combination of *Byers et al.* in view of *Aoyagi et al.* does not disclose, teach, or suggest at least the feature of “means for saving at least one parameter of an adaptive device located within said receiver, and calculated by said DSP, if said frame check sequence indicates that said received signal is error free” as recited in claim 71. Nor does the proposed combination disclose, teach, or suggest at least the feature of “saving at least one parameter of an adaptive

device located within said receiver, and calculated by said DSP, if said frame check sequence indicates that said received signal is error free” as recited in claim 76.

*Aoyagi et al.* fails to teach, suggest or disclose “saving at least one parameter of an adaptive device located within said receiver, and calculated by said DSP, if said frame check sequence indicates that said received signal is error free.” In regard to *Aoyagi et al.*, the Office Action alleges that “the Abstract in *Aoyagi et al.* teaches that coefficients are updated if the difference between reference data and the equalizer output exceed a threshold, *i.e.*, if there are errors; hence if the threshold is not exceeded then the data is considered correct and coefficients are not updated.” (Office Action, p. 9). Applicant agrees that *Aoyagi et al.* teaches that coefficients are updated if there are errors. Further, Applicant will also assume, *arguendo*, that coefficients are not updated if there are no errors (although *Aoyagi et al.* does not explicitly disclose this).

However, Applicant respectfully disagrees with the conclusion reached in the Office Action based on the above premises, namely, “hence, *Aoyagi et al.* teaches *saving* adaptive tap coefficient parameters of an adaptive equalizer located within a receiver, and calculated by said DSP, if said frame check sequence indicates that the received signal is error-free.” (Office Action, p. 9). The Office Action is apparently equating the alleged suggestion in *Aoyagi et al.* of “not updating coefficients” with the limitation “saving adaptive parameters.” Applicant respectfully submits that “not updating” and “saving” are not equivalent. In fact, both “update” and “save” have similar meanings (“store”), and in that sense, “not updating” and “saving” are opposites. Thus, *Aoyagi et al.* does not disclose, teach, or suggest the above-described features recited in claims 71 and 76.

The Office Action admits “*Byers et al.* does not explicitly teach the specific use of saving adaptive parameters of an adaptive device located with said receiver, and calculated by said DSP, if said frame check sequence indicates that said received signal is error-free.” (Office Action, p. 8, section 5). Accordingly, the proposed combination of *Byers et al.* in view of *Aoyagi et al.* does not teach the above-described feature recited in claims 71 and 76. Since the proposed combination does not teach at least this feature, a *prima facie* case establishing an obviousness rejection by *Byers et al.* in view of *Aoyagi et al.* has not been made. Thus, claims 71 and 76 are not obvious under the proposed combination, and the rejection should be withdrawn.

b. Claims 72 and 77

Although claims 72 and 77 have been rejected as unpatentable over *Byers et al.* in view of *Aoyagi et al.*, the specific claim language recited by these claims is not addressed in the Office Action. Applicant respectfully submits that claims 72 and 77 are allowable for at least the reason that the proposed combination of *Byers et al.* in view of *Aoyagi et al.* does not disclose, teach, or suggest at least the feature of “means for using existing parameters of an adaptive device located within said receiver if said frame check sequence indicates that said received signal contains errors” as recited in claim 72. Nor does the proposed combination disclose, teach, or suggest at least the feature of “using existing parameters of an adaptive device located within said receiver if said frame check sequence indicates that said received signal contains errors” as recited in claim 77.

In regard to *Aoyagi et al.*, the Office Action alleges that “the Abstract in *Aoyagi et al.* teaches that *coefficients are updated* if the difference between reference data and the equalizer output exceed a threshold, *i.e.*, if there are errors.” (Office Action, p. 9). Applicant respectfully submits that “updating coefficients” as taught by *Aoyagi et al.* cannot be equivalent to “using

existing parameters” as claimed, since the process of updating parameters would actually replace existing parameters.

*Byers et al.* contains no discussion of “using existing parameters of an adaptive device.” Accordingly, the proposed combination of *Byers et al.* in view of *Aoyagi et al.* does not teach the above-described feature recited in claims 72 and 77. Since the proposed combination does not teach at least this feature, a *prima facie* case establishing an obviousness rejection by *Byers et al.* in view of *Aoyagi et al.* has not been made. Thus, claims 72 and 77 are not obvious under the proposed combination, and the rejection should be withdrawn.

c. Claims 73 and 77

Since claims 70 and 75 are allowable for at least the reasons discussed above, Applicant respectfully submits that claims 73 and 77 are allowable for at least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 73 and 77 be withdrawn.

d. Claims 74 and 78

Although claims 74 and 78 have been rejected as unpatentable of *Byers et al.* in view of *Aoyagi et al.*, the specific claim language recited by these claims is not addressed in the Office Action. Applicant respectfully submits that claims 74 and 78 are allowable for at least the reason that the proposed combination of *Byers et al.* in view of *Aoyagi et al.* does not disclose, teach, or suggest at least the feature of “wherein said frame check sequence is used to adapt a receive margin level based on said received signal” as recited in claims 74 and 78. Applicant can find no reference to margin level or adapting margin level in either *Byers et al.* or *Aoyagi et al.* Since the proposed combination does not teach at least this feature, a *prima facie* case establishing an obviousness rejection by *Byers et al.* in view of *Aoyagi et al.* has not been made. Thus, claims



74 and 78 are not obvious under the proposed combination, and the rejection should be withdrawn.

7. Rejection of Claims 70-79 Under Obviousness-Type Double Patenting

Claims 70-79 have been rejected under the judicially created doctrine of obviousness-type double patenting, as allegedly being unpatentable over claims 6-14 of U.S. Patent No. 6,272,108 to *Chapman* (“the ‘108 patent”) in view of *Aoyagi et al.* (U.S. 4,613,975). Applicant respectfully traverses the rejection.

The Office Action alleges that “*Aoyagi et al.* teaches saving adaptive parameters of an adaptive device located within said receiver, and calculated by said DSP, if said frame check sequence indicates that said received signal is error free, that is; if the difference between a reference data and the equalizer output is small.” (Office Action, p. 11.) Applicant respectfully disagrees.

In regard to *Aoyagi et al.*, the Office Action first alleges that “the Abstract in *Aoyagi et al.* teaches that coefficients are updated if the difference between reference data and the equalizer output exceed a threshold, *i.e.*, if there are errors; hence if the threshold is not exceeded then the data is considered correct and coefficients are not updated.” (Office Action, p. 11). Applicant agrees that *Aoyagi et al.* teaches that coefficients are updated if there are errors. Further, Applicant will also assume, *arguendo*, that coefficients are not updated if there are no errors (although *Aoyagi et al.* does not explicitly disclose this).

However, Applicant respectfully disagrees with the conclusion reached in the Office Action based on the above premises, namely, “hence *Aoyagi et al.* teaches **saving** adaptive tap coefficient parameters of an adaptive equalizer located within a receiver, and calculated by said DSP, if said frame check sequence indicates that the received signal is error-free.” (Office

Action, p. 11). The Office Action is apparently equating the alleged suggestion in *Aoyagi et al.* of “not updating coefficients” with the limitation “saving adaptive parameters.” Applicant respectfully submits that “not updating” and “saving” are not equivalent. In fact, both “update” and “save” have similar meanings (“store”), and in that sense, “not updating” and “saving” are opposites.

Thus, *Aoyagi et al.* does not disclose, teach, or suggest the above-described features recited in claims 70-79. Furthermore, the Office Action admits that the ‘108 patent “does not explicitly teach the specific use of saving adaptive parameters of an adaptive device located within said receiver, and calculated by said DSP, if said frame check sequence indicates that said received signal is error free.” (Office Action, pages 10-11.) Since neither reference teaches the above-described features, claims 70-79 are not obvious under the proposed combination, and the rejection should be withdrawn.

8. Newly Added Claims


Applicant submits that no new matter has been added in the new claims 80-102 and that new claims 80-102 are allowable over the cited references. Specifically, independent claim 88 is allowable for at least the reason that the cited references do not disclose, teach, or suggest at least the feature of “a digital signal processor (DSP) configured to perform OSI layer one processing on the received signal and to compute a frame check sequence (FCS) on each frame of said received signal”. Independent claim 98 is allowable for at least the reason that the cited references do not disclose, teach, or suggest at least the feature of “performing, in a digital signal processor (DSP), OSI layer one processing on a received signal to produce a received data stream.” Therefore, Applicant requests that the Examiner enter and allow the above new claims.

**CONCLUSION**

Applicant respectfully requests that all outstanding objections and rejections be withdrawn and that this application and presently pending claims 70-102 be allowed to issue. Although some dependent claim rejections and some obviousness rejections are explicitly addressed above, the omission of arguments for other claims is not intended to be construed as an implied admission that Applicant agrees with the rejection or finding of obviousness for the respective claim or claims. Although some dependent claim rejections and some obviousness rejections are explicitly addressed above, the omission of arguments for other claims is not intended to be construed as an implied admission that Applicant agrees with the rejection or finding of obviousness for the respective claim or claims. If the Examiner has any questions or comments regarding Applicant's response, the Examiner is encouraged to telephone Applicant's undersigned counsel.

Respectfully submitted,

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